

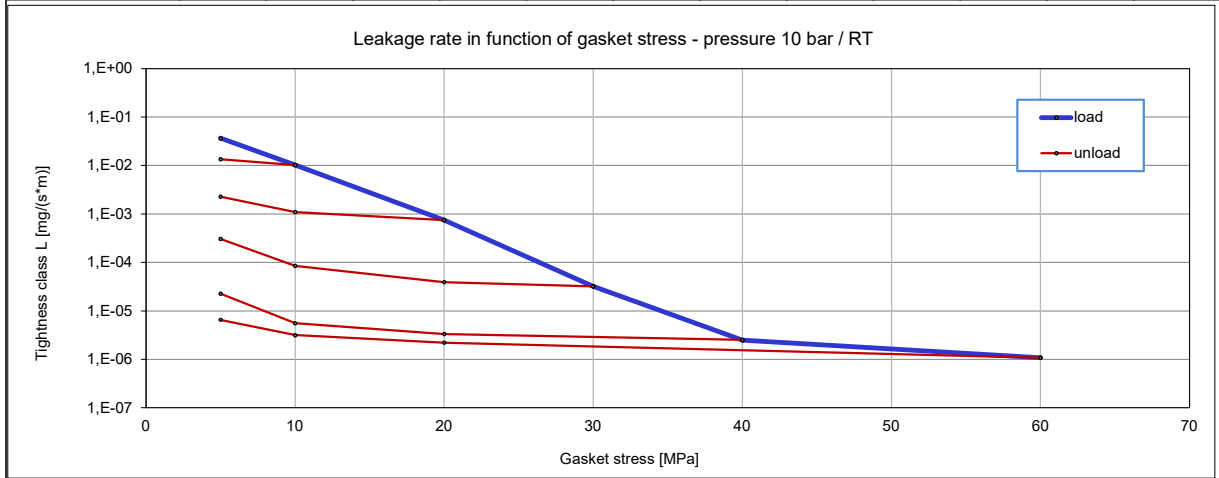
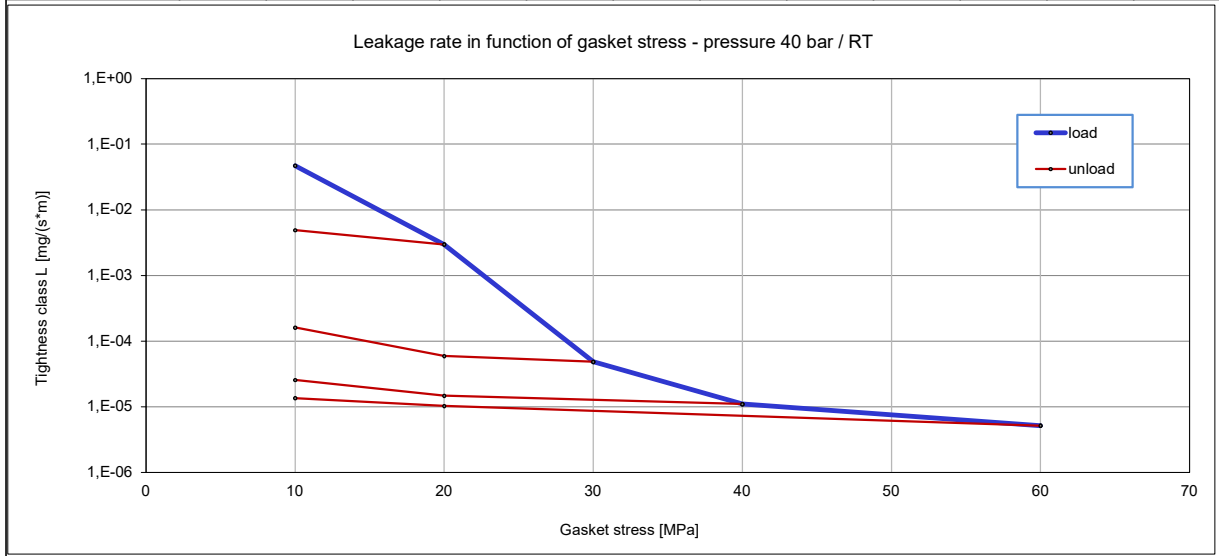
	LABORATORY OF SEALING MATERIALS 43-382 Bielsko-Biala, ul. Szyprów 17 tel. +48 33 8184133 e-mail: lbmu@spetech.com.pl www.laboratory.spetech.eu			 www.tuv.com 210/41/5952  LB - 12402
	Company	SPETECH sp. z o.o.		
Gasket Type	SPETOFLON® FL 300			
Dimensions [mm]	92 x 49 x 2 (DN40 PN40)			
Calculation type EN 1591-1	a) flat gasket;	EN 1514-1	IBC	
Notes:	Rev.1 (17-02-2021)			

Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2009/ :2013

Minimum level of surface pressure required for leakage rate class L on assembly Q _{min/L} and after off-loading Q _{Smin/L} at room temperature (RT)											
Internal pressure [bar]	10										
L [mg/(s*m)]	Q _{min/L} [MPa]	Q _{Smin/L} [MPa] for effective gasket stress									
		Q _A = 10 [MPa]	Q _A = 20 [MPa]	Q _A = 30 [MPa]	Q _A = 40 [MPa]	Q _A = 60 [MPa]					
10 ⁻⁰	5	5	5	5	5	5					
10 ⁻¹	5	5	5	5	5	5					
10 ⁻²	10		5	5	5	5					
10 ⁻³	19		13	5	5	5					
10 ⁻⁴	27			10	5	5					
10 ⁻⁵	35				8	5					



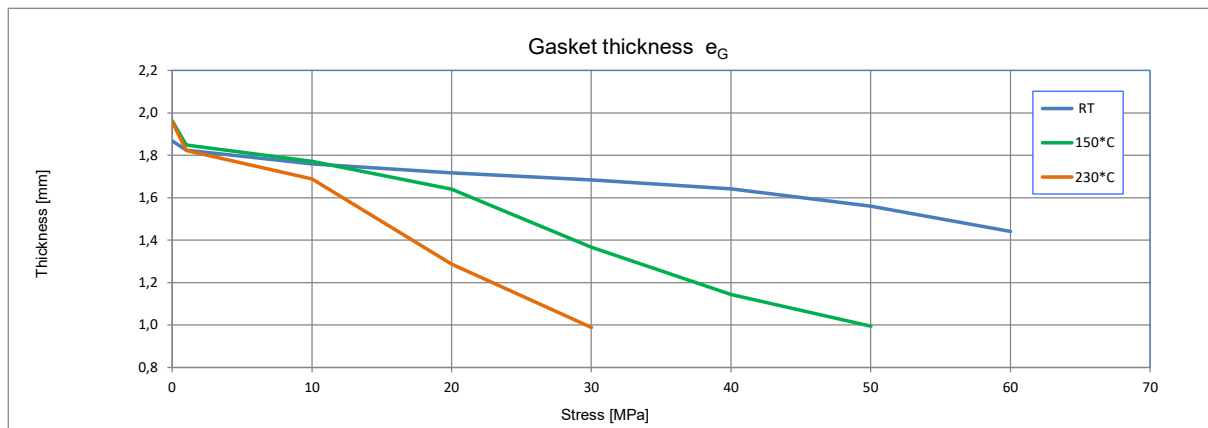
Minimum level of surface pressure required for leakage rate class L on assembly Q _{min/L} and after off-loading Q _{Smin/L} at room temperature (RT)											
Internal pressure [bar]	40										
L [mg/(s*m)]	Q _{min/L} [MPa]	Q _{Smin/L} [MPa] for effective gasket stress									
		Q _A = 20 [MPa]	Q _A = 30 [MPa]	Q _A = 40 [MPa]	Q _A = 60 [MPa]						
10 ⁻⁰	10	10	10	10	10						
10 ⁻¹	10	10	10	10	10						
10 ⁻²	16	10	10	10	10						
10 ⁻³	23		10	10	10						
10 ⁻⁴	29		15	10	10						
10 ⁻⁵	42				22						



Temperature		RT						Q_{smax}	μ_G
Gasket stress	E_G	e_G	C=500 kN/mm		C=1500 kN/mm				
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}			
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]	
0		1,868					60	0,12	
1		1,825							
10	1070	1,760	0,96	0,004					
20	1986	1,718							
30	2913	1,684	0,94	0,016					
40	3692	1,641							
50	4592	1,561							
60	5283	1,441	0,83	0,084					

Temperature		150°C						Q_{smax}	μ_G
Gasket stress	E_G	e_G	C=500 kN/mm		C=1500 kN/mm				
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}			
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]	
0		1,964					50	0,12	
1		1,849							
10	984	1,772	0,75	0,021					
20	1489	1,640							
30	1911	1,367	0,54	0,115					
40	2566	1,144							
50	2960	0,994	0,46	0,225					

Temperature		230°C						Q_{smax}	μ_G
Gasket stress	E_G	e_G	C=500 kN/mm		C=1500 kN/mm				
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}			
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]	
0		1,959					30	0,12	
1		1,823							
10	730	1,688	0,63	0,031					
20	1087	1,287							
30	1298	0,987	0,38	0,156					



Description:	E_G	Modulus of elasticity	Q_{smax}	Maximum surface pressure
	e_G	Gasket or sealing element thickness	μ_G	Static friction factor
	P_{QR}	Creep relaxation factor	C	Stiffness
	Δe_{Gc}	Gasket thickness change due to creep		

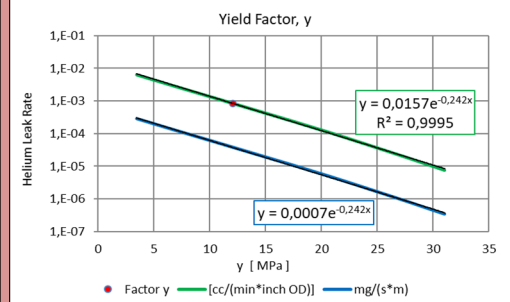
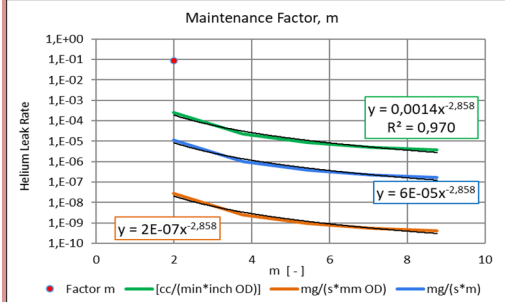
Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2001

T [°C]	Q_{min} [MPa]	$Q_{max, ref}$ [MPa]	E_0 [MPa]	K_1	Q/P	g_c	c_1
20	10	50	600	20	1,3	0,9	
100	-	35	500	20	1,3	0,7	
200	-	20	400	20	1,3	0,5	
b_{Gref} [mm]		19,5		e_{Gref} [mm]		2,0	

Factors acc. to:

EN 13445-3 : Unfired pressure vessels - Part 3: Design
 EN 13480-3:2002 Metallic industrial piping - Part 3: Design and calculation
 ASME Code s. VIII Boiler & Pressure Vessel Code

Tightness class	ASTM F3149	PVRC Tightness class		EN 13555	
		T3	T4	L0,01	L0,001
Factor m	[-]	2,0	< 2,0	< 2,0	< 2,0
Factor y	[MPa]	12,1		8,0	17,8
	[psi]	1750			



NOTE: Maintenance values [m] less than 2.0 are typically not used in ASME designs except for elastomeric gaskets (Classification D2000).
 Gasket dimensions acc. to EN 1514-1 DN40 PN40
 The given coefficient values are read from the test curves, not from the trend line.

[omax - see maximal applicable gasket stress Qsmax acc. EN 1591-1:2009/2013](#)

Factors acc. to:

AD 2000-Merkblatt B7 August 2007

k_0k_D [N/mm]	k_1 [mm]	k_0k_9 [N/mm]
$22 \cdot b_D$	$1,3 \cdot b_D$	$\cdot b_D$

[omax - see maximal applicable gasket stress Qsmax acc. EN 1591-1:2009/2013](#)

Factors acc. to:

WUDT-UC-WO-O/19

σ_m [MPa]	σ_r [MPa]	b [1]		
		20°C	100°C	200°C
18,3	$5,0 \cdot p_0$	1,1	1,8	2,6

[omax - see maximal applicable gasket stress Qsmax acc. EN 1591-1:2009/2013](#)

Factors acc. to:

ASTM F36-2003 Standard Test Method for Compressibility and Recovery of Gasket Materials
 Procedure J

Compressibility [%]	Recovery [%]
NDA	NDA

Factors acc. to:

ASTM F38-00 Standard Test Methods for Creep Relaxation of a Gasket Material (Method B)

Temperature [°C]	Creep Relaxation [%]
20	NDA
100	NDA
200	NDA

Factors acc. to:

EN 61340-2-3 Electrostatics - Part 2-3: Methods of test for determining the resistance and resistivity of solid planar materials used to avoid electrostatic charge accumulation

Surface resistance R_s at U=100V	[Ω]	>	1,00E+12
Volume resistance R_v at U=100V	[Ω]	>	7,24E+11
Surface resistivity ρ_s at U=100V	[Ω]	>	1,01E+13
Volume resistivity ρ_v at U=100V	[Ωm]	>	5,38E+11